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ABSTRACT

In July and August 1975, 17 men and 63 women living in rural areas in Butler County, Pennsylvania were interviewed as to their behaviors, beliefs, and attitudes related to preventing cancer and coronary heart disease. Respondents represented about 12% of all adults living on commercial farms and 5% of all rural nonfarm adults in the county. A commercial farm was one that "either sold $10,000 or more produce per year or the operator worked more than half time on the farm". During the interview, each respondent was asked 167 questions pertaining to: the seriousness and susceptibility of the disease, early detection, their knowledge about the disease, high blood pressure, dietary and weight control practices, and medical services. Each person rated eight selected diseases as to their seriousness and susceptibility. Findings included: cancer, heart disease, glaucoma, and emphysema were perceived to be serious, with cancer being the most serious; 27% felt they were likely to have heart disease; 30% believed themselves likely to have cancer; 3 out of 10 persons could name either 1 or none of the 7 cancer signs; 1/3 of the farm men and women reported never or only occasionally consciously observing dietary rules; and 92% indicated a willingness to consider treatment by allied health personnel. (NQ)

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HEALTH EDUCATION NEEDS
A SURVEY OF RURAL ADULTS IN BUTLER COUNTY
PENNSYLVANIA, 1975
AN INTERIM REPORT

By

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and
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Paper Number 7

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INTRODUCTION

Americans spend a great deal of money as individuals each year in efforts to keep healthy. In 1975 this amount is estimated to be 118.5 billion dollars (Abelson, 1976:619). Our magazines and newspapers frequently publish articles about illnesses and their treatment or prevention. The federal government's budget for health research in 1972 was 1.8 billion (Cooper, 1973:7).

Even though health in general is usually viewed as important, all health problems do not have equal importance over time. Through scientific discoveries and technological advances many causes of illness and death have been substantially reduced. One of the most dramatic instances of this in recent times is the use of vaccine for paralytic poliomyelitus prevention. The 1958 peak of 6,031 cases in the United States may be compared with only 40 cases reported a decade later (Langmuir, 1959; Hopkins, 1969). Similarly, the occurrence or seriousness of many other illnesses of an acute nature have been reduced.

Increasing attention is being given to illnesses of a chronic character such as cancer and heart disease. These diseases now rank among the two most frequent causes of death or mortality in the general population of Pennsylvania (Natality and Mortality Statistics, 1973:v-vi).

Further, using arteriosclerosis and hypertensive diseases as a means of estimating the economic costs of heart disease, a 1972 task force report estimates the direct annual cost of these illnesses at $4.3 billion (National Institutes of Health, 138).

For this study, these two most frequent causes of mortality are emphasized. Behaviors, beliefs, and attitudes related to preventing rather than treating those illnesses form the basis for this report.

SOURCE OF THE INFORMATION

In July and August, 1975 a probability sample of 17 men and 63 women living in rural areas in Butler County, Pennsylvania were interviewed. They represented about 12 percent of all adults living on commercial farms in this county and .05 percent of all rural nonfarm adults in the county. [1]

During a face-to-face interview setting, each respondent was asked 167 questions. The interviewers recorded their responses which were later summarized using Penn State's computer facilities. [2]

RESULTS

Seriousness and Susceptibility

Each person rated eight selected diseases regarding their seriousness and susceptibility. Seriousness was defined in terms of the respondents' personal situation. The indidivuals' judgement of susceptibility was made on the basis of their own experience, knowledge, and personal observations. Cancer was perceived to be the most serious of all eight illnesses. Heart disease, glaucoma and emphysema were also perceived to be serious by the respondents (Table 1). The contrast between the two leading causes of mortality, heart disease and cancer (rows 1 and 2), and colds and headaches (rows 7 and 8) suggests that individuals' judgements of seriousness were reliable.

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1 A commercial farm is defined as one that either sells $10,000 or more produce per year or the operator works more than one-half of his/her time on the farm. A small number of special cases that did not meet these criteria were included because of other characteristics reported by key informants in the county. Ninety percent of the total number of persons contacted agreed to be interviewed.

2 The Statistical Programs for Social Sciences system (SPSS, version 6) was used (Nye,1974).

Table 1. Rating of Perceived Effect of Selected Diseases 1975 Butler County Preventive Health Educational Needs Inventory (N=80)

Disease*	Degree of Changes Required					
	Major	Some	Uncertain	Few	None	Total
	(Read across for 100 percent)					
Heart Disease	36	48	6	9	1	100
Cancer	54	26	12	3	5	100
Emphysema	38	40	8	11	3	100
Glaucoma	38	41	9	11	1	100
Diabetes	20	42	5	30	3	100
Stomach Ulcers	19	48	3	28	46	100
Colds	0	14	0	26	60	100
Headaches	0	14	0	26	60	100

*Not answering were 1, 2, and 2 persons respectively for Headaches, Heart Disease, and Cancer.

Further, the high percentage of respondents judging cancer and heart disease as serious enough to require changes in their present life (80 and 84 percent respectively) means that educational efforts may be directed at other areas. People already believe these are serious; now, what should they do about them?

One's motivation to adopt recommended health practices is not based solely on perceptions of seriousness. Persons may ask,"But, what are my chances of getting sick with this disease?" The data in Table 2 show that 27 percent of the respondents perceive themselves as either likely or very likely to have heart disease. A slightly larger percentage, 30, believe themselves likely to have cancer. [3] The threat of one of these serious diseases is, thus, sufficiently high to suggest that a sizeable minority of the population studied may be ready to adopt recommended practices to prevent these diseases if they have not already done so.

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[3] This perceived rate may be compared with the national rate of actual occurrence of 25 percent (American Cancer Society, 3).

Table 2. Rating of Susceptibility to Selected Diseases
1975 Butler County Preventive Health
Educational Needs Inventory (N=80)

Disease*	Susceptibility Rating: Very Likely	Likely	Depends	Unlikely	Very Unlikely	Total
	(Read across for 100 percent)					
Common Cold	15	28	24	25	8	100
Headaches	20	19	18	23	20	100
Heart Disease	7	20	26	27	20	100
Cancer	6	24	24	32	14	100
Diabetes	5	14	14	30	37	100
Stomach Ulcers	11	19	11	37	22	100
Glaucoma	1	10	21	31	37	100
Emphysema	3	12	11	35	39	100

*With the exception of Headaches, not answering were 1, 5, 14, 6, 3,6, and 9 persons, respectively by disease.

Early Detection and Knowledge About Cancer

Research on rates of occurrence of cancer and subsequent mortality has shown that "more people die of cancer which could have been cured or prevented than of cancer for which a cure has yet to be found (American Cancer Society,4). Thus, it is important to know how useful persons feel early detection is in cancer treatment. Seventy-five percent of those responding agreed that many types of cancer detected in the early stages can be cured (Table 3). Only five persons out of 80 disagreed.

Table 3. Opinion Rating about Statement: "Many types of cancer detected in the early stages can be cured." 1975 Butler County Preventive Health Educational Needs Inventory (N=80)

Opinion	Percentage
Strongly Agree	1
Agree a Little	74
Depends	18
Disagree a Little	6
Strongly Disagree	0
Do Not Know	1
Total	100

In contrast, however, were individuals' knowledge of the warning signals of cancer as suggested by the American Cancer Society (Table 4A). On the basis of immediate recall, three persons out of ten could name either one or none of the seven symptoms. On one hand, educators may be encouraged by the high agreement over the usefulness of early detection. On the other hand, current knowledge among this population seems sufficiently low to suggest a continuing need for programs to acquaint persons with the symptoms.

Table 4A. Number of Cancer Signals Recalled 1975 Butler County Preventive Health Educational Needs Inventory (N=80)

Number of Cancer Signals Recalled	Percentage
None	14
1	15
2	11
3	18.5
4	18.5
5	15
6	5
7	3
Total	100

Of specific interest may be signals associated with high rates of occurrence and cure. The estimated number of new cases of cancer per year for the breast and uterus sites are 40 percent of all cases. And, five-year cancer survival rates for these sites are 84 and 82 percent respectively (American Cancer Society, 8). The data in Table 4B show that the warning signals associated with these sites are known most commonly. More than half of the respondents correctly identified these warning signals.

Table 4B. Respondents' Knowledge of Seven Warning Signals by Individual Signals 1975 Butler County Preventive Health Educational Needs Inventory (N=80)

Signal	Percent Recalling Warning Signal		
	Correct	Do Not Know	Total
Thickening of lump in breast or elsewhere	66	34	100
Unusual bleeding or discharge	55	45	100
Nagging cough or hoarseness	47	53	100
A sore that does not heal	26	74	100
Obvious change in wart or mole	37	63	100
Change in bowel or bladder habits	35	65	100
Indigestion or difficulty in swallowing	24	76	100

Given that cancer is the leading cause of death among women 30-54, this study also asked the 63 women about a pap test. * Three out of five of the women in this population reported having a pap test in the past year (Table 5A). This finding is similar to that of a national sample of women aged 17 and over, 61 percent of whom had a pap test within a year prior to being

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* Pap test here refers to the papanicolaou test for cervical cancer.

interviewed (Vital Statistics, 1975). Those women not having a pap test, when asked why they had not done so, responded most frequently by saying, "I didn't need it", "I was too busy", or "I didn't think of it" (Table 5B).

Table 5A. Participation in Selected Preventive Health Practices During the Past 12 Months, Percentages 1975 Butler County Preventive Health Educational Needs Inventory (N=80)

Preventive Health Practice	Percentage		
	Yes	No	Total
Physical Exam	61	39	100
Dental Checkup (1)	67	33	100
Pap test (2)	59	41	100
Eyes Examined	44	56	100
Chest X-Ray	31	69	100

(1) Excludes 33 persons reporting dentures.

(2) Women only, N=60 (3 women did not answer).

Table 5B. Respondents' Reasons for Non-Participation in Selected Preventive Health Practices During the Past 12 Months, Percentages 1975 Butler County Preventive Health Educational Needs Inventory (1)

Barrier to Having the Preventive Work Done in the Past 12 Months	Physical Exam	Chest X-Ray	Dental Checkup	Eye Exam	Pap Test
I didn't need it...	55	37	42	74	35
I didn't think of it...	15	32	11	5	15
I was too busy...	15	9	26	7	15
I didn't have transportation...	0	2	0	0	
I wasn't free to go when they were open...	4	11	5	5	5
I didn't want to spend the money...	0	0	11	2	0
I couldn't get anyone to see me...	0	0	0	0	0
Other...	11	9	5	7	30
	100	100	100	100	100
No. Not Answering	4	7	3	4	6

(1) The respondents who replied "no" for a practice in Table 5A were also asked the most important reason for not doing it (barrier to use).

While a few of these persons may not have actually needed a pap smear because of medically sound reasons, surely 70 percent of this category could not be excluded from need for that reason.[s]

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[s] While some may believe post-menopausal women are not at risk due to uterine or cervical cancers, 1973 data show these cancers rank 4th and 5th respectively for women in age categories 55-74 and 75 & over (American Cancer Society, 13).

It is notable that reasons related to access such as availability, cost and convenience were rarely cited for the pap test while small percentages occur for other preventive health practices in these categories (Table 5B).

The situation may, therefore, be better defined as a problem in education rather than community service access. The educator's task is formidable. It has been demonstrated that for selected situations approximately 10 percent of health behavior is related to health knowledge (Dowell, 1969). Regardless of the fact that cancer is perceived to be serious and early detection is seen as effective, a large portion (41%) of women in this study population did not place the pap test as a health maintenance behavior high enough among their personal priorities to go and have a pap smear made. The educational programs may, therefore, have to emphasize motivation as much or more than knowledge.

Heart Disease and High Blood Pressure

Heart disease is the leading cause of death in the United States and Pennsylvania. * It is not surprising to find, therefore, among rural men and women interviewed for this study a high level of concern. Twenty-seven percent of these persons felt they were likely to have heart disease. Its seriousness as an illness is reflected in that 84 percent saw it as serious or very serious.

Associated with the frequency of occurrence of heart disease are factors such as high blood pressure, overweight and lack of regular physical exercise. Among a national sample of white adults aged 18 to 74 years the prevalence rate for significantly high blood pressure was reported to be (Roberts, 1975:19):

Sex	Age	Rate Per 100 Persons
Men	18-44	21
	45-59	45
	60-74	39
Women	18-44	11
	45-59	29
	60-74	36

Respondents living on farms in this county reported rates of 6 and 13 per 100 for males and females respectively (Table 7). In addition, those persons reporting normal blood pressure were asked about having their blood pressure checked (Table 6). While 99 percent reported ever having their blood pressure checked in the past, a lower percentage, 87, reported doing so in the past 18 months. Persons in the more susceptible age categories (45 and over) do not have significantly higher rates of checks than do those in the 18-44 category.

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* While the heart disease mortality rate in Pennsylvania in 1973 was 440 per 100,000 mid-year population, the cancer (malignant neoplasms) mortality rate for the same year was 192. By comparison, the mortality rates for cerebrovascular disease and accidents were 105 and 42 respectively. (Natality and Mortality Statistics, 1973:6). For further comparison see Jurkat (1974).

Table 6. Year of Most Recent Blood Pressure Check for Persons Reporting Normal Blood Pressure 1975 Butler County Preventive Health Educational Needs Inventory (N=68)*

Year	Percentage
1975	69
1974	18
1973	9
1972 and before	4
Total	100

*Excludes 12 cases reporting high blood pressure or not able to recall.

Table 7. Respondents' Self-Reported Blood Pressure 1975 Butler County Preventive Health Educational Needs Inventory (N=79)

	Percentage
I do have high blood pressure...	11
I do not have high blood pressure...	89
Total	100

Not answering was 1 person.

Eighty-four percent of the respondents reported having their blood pressure checked while visiting a doctor's office (table 8). Since 80 percent of all persons interviewed had visited a physician in the past year for either acute or preventive health reasons, it does not seem reasonable to try to increase the blood pressure checking rate by encouraging a more uniform application of this practice at such times.

Table 8. Location at Which Blood Pressure was Checked for Persons Reporting Normal Blood Pressure 1975 Butler County Preventive Health Educational Needs Inventory (N=70)

Location	Percentage
Individual chechup or physical examination	65
While being treated for an illness or injury	19
Screening Program	10
Other	6
Total	100

The potential for acceptance of treatment of high blood pressure may be high once it is diagnosed. Nearly all persons interviewed (89 percent) felt that high blood pressure can be reduced and were aware of one or more ways in which this could be accomplished.

Heart Disease and Overweight

While this study did not include physiological measures of overweight or obesity, it did inquire into dietary and weight control practices and feelings. Approximately one-third of the farm men and women reported never or only occasionally consciously observing dietary rules (Table 9).

Table 9. Eating Habits, Weight Control, and Dieting
1975 Butler County Preventive Health
Educational Needs Inventory (N=79)

	Never	Occasionally	Usually	Always	Total
Careful Eater (1)	18	19	52	11	100
Regulate Diet (2)	16	16	45	23	100

(1) "I am careful about how much I eat."

(2) "I am careful about what kinds of food I eat."

In addition, respondents evaluated the degree of difficulty they had in regulating their diet (Table 10A). Only 14 percent of the respondents felt that dietary regulation was difficult (6 percent for men and 16 percent for women).

Table 10A. Difficulty of Regulating Diet, Getting Physical Exercise, and Taking Medicine*
1975 Butler County Preventive Health
Educational Needs Inventory (N=80)

	Very Easy or Easy	Average	Difficult or Very Difficult	Total
	(Read across for 100 percent)			
Diet	64	22	14	100
Exercise	77	13	10	100
Medicine	84	5	11	100

*"How difficult would it be for you to do each of these:
(d) regulate the kinds of food you eat?"
(e) get regular physical exercise?"
(f) take medicine on a regular basis?"

Not answering were 1 person for Diet and Medicine.

The results of a program for detecting health problems among

adults living in rural areas of Pennsylvania show that obesity is the most important problem among persons screened. (Pa. Dept. Agric.:6) The facts obtained by the present study suggest two conclusions. First, if the incidence of obesity among these farm men and women is at all similar to the population in the health problems screening program, there surely is an excessive degree of risk of heart disease being borne by the respondents. Second, while a sizeable minority of respondents may already be following recommended dietary practices to attain or maintain desirable weight levels, a significant minority of persons appear to feel their diet is not of concern to them.

These findings indicate perhaps, that the relationship between heart disease and obesity is not as well known or understood as that between high blood pressure and heart disease.

Medical Services

Although availability of medical services was not central to the question assessing the preventive health education needs of the rural population in Butler County, the topic is of sufficiently broad interest to be studied and discussed. Sixty-three percent of those responding felt that it was either easy or very easy to get an appointment with a doctor for a complete physical examination, while 11 percent felt that it would be difficult or very difficult.

On a slightly different issue, respondents assessed their probable use of allied health personnel (Table 11). Perhaps of greatest interest in this era of the mid-level practitioner (medical associate, physician's assistant, nurse practitioner) is the fact that 92 percent of those interviewed indicated a willingness to consider treatment by these persons.

Table 11. Rating on Attitudes Toward Allied Medical Personnel: "I would accept medical help from a physician's assistant, such as a nurse practitioner, Medex, or family health specialist, working under the direct supervision of a doctor."
1975 Butler County Preventive Health Educational Needs inventory (N=76)

Response	Percentage
Always	48
Usually	28
Occasionally	16
Never	5
Uncertain	3
Total	100

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